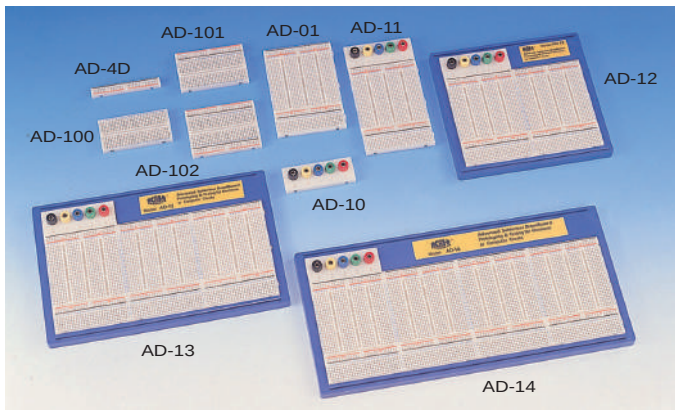


AD SERIES



MATERIAL

External Body is made of ABS.

The internal interconnected clips are made of following materials

MODEL NO. with last character of N: Nickel Plated

S: Silver Plated

AD-4D 48 Tie points

AD-100 360 Tie points

AD-101 408 Tie points

AD-102 456 Tie points

AD-01 948 Tie points

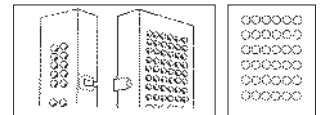
AD-10 Power Block with Binding post

AD-11 Power Block & 958 Tie points

AD-12 Power Block & 1906 Tie points

AD-13 Power Block & 2854 Tie points

AD-14 Power Block & 3802 Tie points



SNAP LOCK

ROUND HOLE

SPECIFICATION

MODEL	DIMENSION (m / m)			TIE-POINTS	6 interconnected CLIP	12 interconnected CLIP	24 interconnected CLIP	TERMINAL	BACK-PLATE	WEIGHT (g m)
	LENGTH	WIDTH	HEIGHT							
AD-4D	81	12	9	48	0	2	1	0	STICKER	10
AD-100	81	42	9	360	60	0	0	0	STICKER	30
AD-101	81	52	9	408	60	2	1	0	STICKER	40
AD-102	81	62	9	456	60	4	2	0	STICKER	50
AD-10	81	30	19	10	0	0	0	5	STICKER	20.4
AD-01	83	118	9	948	142	4	2	0	STICKER	77.8
AD-11	83	147	19	958	142	4	2	5	STICKER	98.8
AD-12	184	168	24	1906	284	8	4	5	ABS plastic	254.4
AD-13	266	168	24	2854	426	12	6	5	ABS plastic	367.6
AD-14	346	168	24	3802	568	16	8	5	ABS plastic	490.0

AC/DC POWER SUPPLY FOR BREADBOARD PSB-01



WITH BUILT-IN SHORT-PROOF REGULATED POWER SUPPLIES

- Power switch with lamp.
- Just plug in and start to use.
- Compact and light-weighted.
- For both digital/analog circuits.

SPECIFICATIONS

1. DC power supply:
 - DC + 5 V, 1 A; - 5 V, 500 mA. fixed.
 - DC 0 to + 15 V, 500 mA variable.
 - DC 0 to - 15 V, 500 mA variable.
2. AC power supply:
 - AC voltage: 12 V - 6 V - 0 V - 6 V - 12 V, 300 mA fixed.
3. Size: 185(L) x 155(W) x 66(H) with stand (mm)
4. Weight: 3 Kg

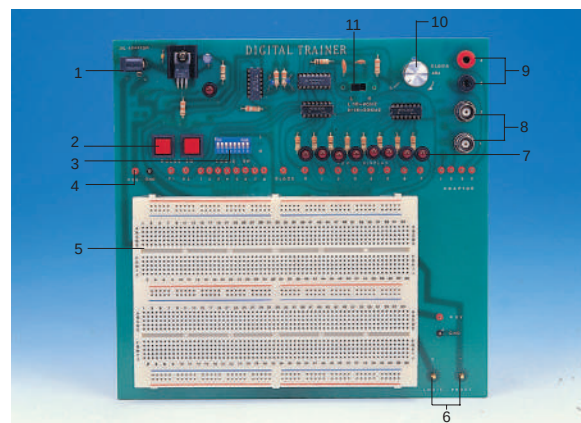
ACCESSORIES

- AC cable x 1
- DC output wires. Red x 4, Black x 1

DIGITAL TRAINER DT-01



For breadboard, digital circuits, flip-flops and monostable multivibrators, counters, encoders, decoders, multiplexers, demultiplexers and sequencers, resistor, LED and 7 segments LED displays, memory devices, etc.



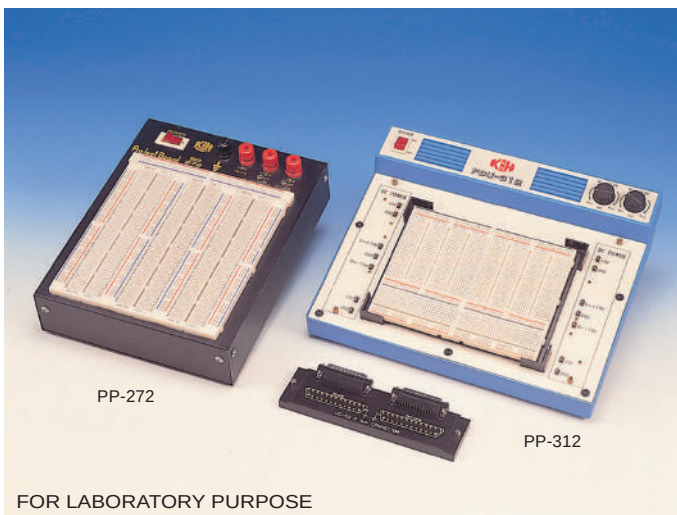
SPECIFICATIONS

1. AC adaptor jack: I/P DC + 8 V, 1.5 A
2. Pulse switch.: Two bounce-free pushbuttons.
3. Logic switch.: Eight logic level switches in DIP type.
4. DC O/P: DC + 5 V, 750 mA for user.
5. B-023 breadboard: Solderless breadboard with 1580 interconnected tie points.
6. Clip terminal: Logic probe clip terminal.
7. LED display: Eight LED buffered logic level indicators.
8. BNC jacks.
9. Select switch.: Clock range selection.
L:10 - 40 Hz. H:1K - 20K Hz.
10. Banana jacks.
11. Clock adj.: Fine adj. of clock frequency.

ACCESSORIES

1. ADP-01 AC Adaptor
2. LP-2800 Logic Probe
3. User's Guide

POWER PROJECT BOARD / CIRCUIT LAB PP-272/PBU-312



PBU-312 CIRCUIT LAB

The PBU-312, Circuit Lab. is a low cost but ideal tool for breadboard (said prototyping) with power supplies and necessary environment connections by means of Universal connector socket (UC series)

SPECIFICATIONS

Power supply: DC + 5 V/1 A, Variable 0 ~ ± 15 V, 500 mA. equipped with short circuit protection.

Breadboard: AD-202 breadboard, 1992 tie points.

PP-272 POWER PROJECT BOARD

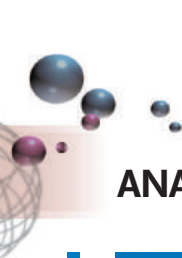
SPECIFICATIONS

1. DC power +5 V/1 A
Variable power 0 ~ ± 15 V/500 mA Equipped with short circuit protection.
2. Solderless breadboard RH-53 interconnected 2420 tie points.
3. Edge plate:
EP-3 edge plate for the best placement of non-dip size components.
4. Power switch with light
5. AC 110 V/220 V, 120 V/240 V, 50/60 Hz
6. Dimension:
Main body 250 x 200 x 80 m/m, With box 305 x 235 x 85 m/m
7. Weight. 2.5 Kg.

OPTIONAL ACCESSORIES

UC series, the universal connector socket family.

Model	ITEM	DESCRIPTION
UC-01	Card edge connector	62 contacts, 2.54mm pitch
UC-02	D-sub connector	25 contacts, male & female
UC-03	Straight header connector	60 contacts
UC-04	Card edge connector	56 contacts, 3.96mm pitch
UC-05-3	DIN 41612 connector	32 contacts, 5.08mm pitch
UC-05-6	DIN 41612 connector	64 contacts, 2.54mm pitch
UC-05-9	DIN 41612 connector	96 contacts, 2.54mm pitch
UC-06	Centronic connector	36 contacts



ANALOG OVERLAY LEARNING SYSTEM

OLS-1000



COMPATIBLE WITH ETS-7000 DIGITAL-ANALOG TRAINING SYSTEM

Electronics could be taught straight out of a book if the students were able to visualise the function of an experimental circuit. Unfortunately this is rarely the case and until now it has been necessary to laboriously assemble every experiment to be examined.

The assembly of each circuit has no didactic value whatsoever other than to provide the student with a circuit on which to do the experiment. Now the OLS-1000 overlay learning system is coming.

FEATURES:

- The OLS-1000 overlay learning system allows the student to assemble even the most involved circuit in less than five minutes thus leaving enough time for fruitful experimentation.



STANDARD SYSTEM PACKAGE

EXPERIMENT CONTENTS:

1. Semiconductor silicon diodes in DC circuits.
2. Light emitting diode in DC circuits.
3. Silicon diodes in AC circuits: half wave rectification.
4. Silicon diodes in AC circuits: full wave rectification.
5. The use of a diode bridge in DC circuits.

- The OLS-1000 overlay learning system gives you an electronic template which guides your students to an immediate and rational experimental layout while the course software relates to the traditional circuit diagram.
- The OLS-1000 analog overlay learning system is compatible with K&H products of IDL-600 analog lab, training system, and ETS-7000 digital-analog Training system, and K&H series proto board.
- No add-ons are required. A standardised set of all necessary components is included. The thoroughly researched course software was designed by educators with over 20 years practical teaching experience and the experiments were especially stressed on the theory rather than further confuse the students. The professionally produced manuals are referred to the most widely used theory books. The schematic diagrams component listing and procedure are clearly listed. Each experiment was tested for typical students reaction prior to final editing.
- No prerequisites are demanded other than basic arithmetic. The emphasis is on an instrumental understanding rather than a mathematical one. The continuous hands-on exposure ensures the transfer of marketable technological skills in the minimum amount of time.

Standard package:

1. Circuit diagram (tracing paper): 28 pcs
2. Experiment book: 1 pce
3. Components: 1 set
4. RM-203 breadboard: 1 pce
5. Dimensions: 290 x 225 x 55 mm (L x W x H)
6. Weight: 1.3 Kg

6. The use of a diode bridge in AC circuits.
7. Filtering and regulation of a pulsating DC voltage.
8. An experimental power supply using a "PI" filter.
9. Voltage multiplying using diodes & capacitors: voltage doubling.
10. DC current gain of a common emitter transistor configuration.
11. The common emitter as an AC amplifying stage.
12. Cascaded stages of amplification.
13. Class A single-ended loudspeaker driven audio amplifier.
14. The class A push-pull audio amplifier.
15. Complementary-symmetrical push-pull output circuits.
16. The field effect transistor: the common-source amplifier.
17. Oscillator circuits: The zero-phase shift oscillator.
18. Oscillator circuits: The phase-shift oscillator.
19. Oscillator circuits: The armstrong oscillator.
20. Oscillator circuits: The hartley oscillator.
21. Oscillator circuits: The colpitts oscillator.
22. Digital integrated circuits: The AND gate.
23. Digital integrated circuits: The OR gate.
24. Digital integrated circuits: The AND-OR function.
25. Digital integrated circuits: The inverting gate.
26. Digital integrated circuits: The NAND gate.
27. Digital integrated circuits: The NOR gate.
28. Digital integrated circuits: The full adder.

DIGITAL OVERLAY LEARNING SYSTEM OLS-2000



COMPATIBLE WITH IDL-800 DIGITAL LAB

Electronics could be taught straight out of a book if the students were able to visualise the function of an experimental circuit. Unfortunately this is rarely the case and until now it has been necessary to laboriously assemble every experiment to be examined.

The assembly of each circuit has no didactic value whatsoever other than to provide the student with a circuit on which to do the experiment. Now the OLS-2000 overlay learning system is coming:

FEATURES

- The OLS-2000 overlay learning system allows the student to assemble even the most involved circuit in less than five minutes thus leaving enough time for fruitful experimentation.



STANDARD SYSTEM PACKAGE

EXPERIMENT CONTENTS

1. FE-01 basic logic functions
2. FE-02 basic logic functions
3. FE-03 basic logic functions
4. FE-04 basic logic functions
5. FE-05 boolean algebra and simplification of logic equations
6. FE-06 boolean algebra and simplification of logic equations
7. FE-07 boolean algebra and simplification of logic equations
8. FE-08 boolean algebra and simplification of logic equations
9. FE-09 boolean algebra and simplification of logic equations
10. FE-10 boolean algebra and simplification of logic equations
11. FE-11 demorgan's theorem
12. FE-12 demorgan's theorem
13. FE-13 demorgan's theorem
14. FE-14 demorgan's theorem
15. FE-15 demorgan's theorem
16. FE-16 TTL NAND/NOR gates definitions and operation
17. FE-17 NAND/NOR gates definitions and operation
18. FE-18 the "exclusive-OR" and its applications
19. FE-19 the "exclusive-OR" and its applications
20. FE-20 the "exclusive- OR" and its applications

- The OLS-2000 overlay learning system is compatible with K&H products of IDL-800 digital lab. DT-01 digital trainer, PP-272 power project board, ETS-5000 advanced digital system, ETS-7000 digital-analog training system and K&H series proto-board.

- No add-ons are required. A standardised set of all necessary components is included. The thoroughly researched course software was designed by educators with over 20 years practical teaching experience and the experiments were especially stressed on the theory rather than further confuse the students. The professionally produced manuals are referred to the most widely used theory books. The schematic diagrams component listing and procedure are clearly listed. Each experiment was tested for typical students reaction prior to final editing.

- No prerequisites are demanded other than basic arithmetic. The emphasis is on an instrumental understanding rather than a mathematical one. The continuous hands-on exposure ensures the transfer of marketable technological skills in the minimum amount of time.

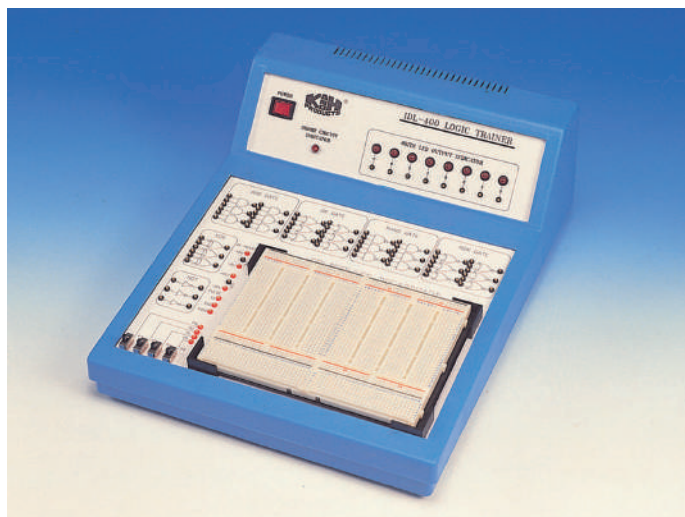
Standard package

1. Circuit diagram (tracing paper): 62 pcs
2. Experiment book: 1 pce
3. Components: 1 set
4. RM-203 breadboard: 1 pce
5. Dimensions: 290 x 225 x 55 mm (L x W x H)
6. Weight: 1.4 Kg

21. FE-21 the "exclusive- OR " and its applications
22. FE-22 the "exclusive- OR" and its applications
23. FE-23 the "exclusive- OR" and its applications
24. FE-24 the "exclusive- OR " and its applications
25. FE-25 full-adder and full-subtractor
26. FE-26 full-adder and full-subtractor
27. FE-27 full-adder and full-subtractor
28. FE-28 full-adder and full-subtractor
29. FE-29 full-adder and full-subtractor
30. FE-30 bistable or flip-flop(FF)
31. FE-31 bistable or flip-flop(FF)
32. FE-32 bistable or flip-flop(FF)
33. FE-33 binary counters and the binary number system
34. FE-34 binary counters and the binary number system
35. FE-35 divide-by-n counters and decade counters
36. FE-36 divide-by-n counters and decade counters
37. FE-37 divide-by-n counters and decade counters
38. FE-38 divide-by-n counters and decade counters
39. FE-39 divide-by-n counters and decade counters
40. FE-40 shift registers and ring counters
41. FE-41 shift registers and ring counters
42. FE-42 shift registers and ring counters
43. FE-43 shift registers and ring counters
44. FE-44 pulse forming and shaping; the schmitt trigger
45. FE-45 pulse forming and shaping; the schmitt trigger
46. FE-46 integrated-circuit timers-the 74122, 74121, and 555
47. FE-47 integrated-circuit timers-the 74122, 74121, and 555
48. FE-48 decoding and encoding
49. FE-49 decoding and encoding
50. FE-50 decoding and encoding
51. FE-51 decoding and encoding
52. FE-52 random-access memories (RAM) scratch pad memories
53. FE-53 random-access memories (RAM) scratch pad memories
54. FE-54 the operational amplifier
55. FE-55 the operational amplifier
56. FE-56 the operational amplifier
57. FE-57 digital-to-analog (D/A) and analog-to-digital (A/D) conversion
58. FE-58 digital-to-analog (D/A) and analog-to-digital (A/D) conversion
59. FE-59 complementary symmetry MOS (CMOS)-principles and characteristics
60. FE-60 complementary symmetry MOS (CMOS)-principles and characteristics
61. FE-61 complementary symmetry MOS (CMOS)-TTL interface
62. FE-62 complementary symmetry MOS (CMOS)-TTL interface



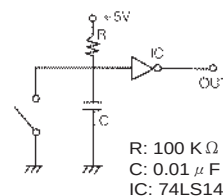
LOGIC TRAINER IDL-400



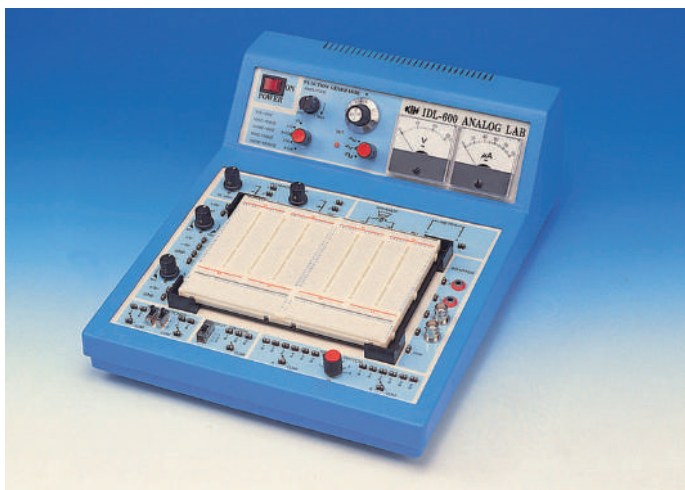
The IDL-400 logic trainer is designed for the logic beginners to enhance the comprehension of basic logical theory. The design of IDL-400 is easy to operate and easy to understand. It is equipped with various kinds of basic logic gates, debounced logical switches, LED indicators, DC power supply with short circuit protection, pulse generator and solderless breadboard.

SPECIFICATIONS

- Basic logic gate units:
It contains 6 kinds of logic gates, i.e. AND gate X 6, OR gate X 6, NAND gate X 6, NOR gate X 6, OR gate X 3, NOT gate X 3.
Input voltage of HI level $> 2.25\text{ V}$
Input voltage of LO level $< 0.8\text{ V}$
- DC power supply: Equipped with short circuit protection and indicator.
 - output voltage $+5\text{ V} \pm 5\%$
Max. output current 1 Amp.
Line regulation $< 50\text{ mV}$
Load regulation $< 100\text{ mV}$
 - Output voltage $-5\text{ V} \pm 5\%$
Max. output current 500 mA
Line regulation $< 25\text{ mV}$
Load regulation $< 30\text{ mV}$
 - Output voltage $\pm 15\text{ V} \pm 5\%$
Max. output current 500 mA
Line regulation $< 150\text{ mV}$
Load regulation $< 150\text{ mV}$
- Pulse generator:
3 kinds of time interval, 1 sec, 0.1 sec, 0.01 sec. Output voltage $+5\text{ V}$
- Debounced logic switch: HI/LO
- 8 bits LED output indicator: Max. input voltage $\leq 15\text{ V DC}$
- Solderless breadboard: AD-200
Interconnected 1896 tie points, fitting all DIP sizes and all components with lead and solid wire AWG #22-30 (0.3-0.8 mm)
- Accessories:
 - Power cord
 - User manual
- Dimensions: 420 x 360 x 200 mm (L x W x H)
- Weight: 4.2 Kg



ANALOG LAB IDL-600



1. Solderless breadboard: AD-200

Interconnected nickel plated 1896 tie points, fitting all DIP sizes and all components with solid leads AWG #22-30 (0.3-0.8mm).

2. DC power supply:

Variable DC power: Output voltage 0 ~ +15 V and 0 ~ -15 V.

Maximum output current 300 mA.

Line regulation < 0.05%/V(at 25°C)

Load regulation < 30 mV(at 25°C.)

+5 VDC power supply: Output voltage $5V \pm 0.25 V$ (no load to full load).

Maximum output current 1 Amp.

-5 VDC Power Supply: Maximum output current 100 mA.

All DC power supplies equipped with short-circuit protection.

3. Function generator:

Frequency ranges

- 1 Hz ~ 10 Hz
- 10 Hz ~ 100 Hz
- 100 Hz ~ 1K Hz
- 1K Hz ~ 10K Hz
- 10K Hz ~ 100K Hz (5 ranges)

Sine wave output: 0~8 Vpp variable.

Triangle wave output: 0~6 Vpp variable.

Square wave output: 0~8 Vpp variable.

4. Voltmeter: 0 - 30VDC full scale, calss 1.5, impedance = 320K Ω .

5. Ampere meter: 0 - 100 μA full scale, class 1.5, impedance = 1 Ω .

6. Pin tip/banana jack: 2 pcs

7. Pin tip/BNC jack: 2 pcs

8. 2 positions slide switch: 2 pcs

9. 3 positions slide switch: 1 pce

10. Potentiometer:

VR1 = 1K Ω

VR2 = 100K Ω

11. 6 positions rotary switch: 1 pce

12. Speaker: 2 1/4", 8 Ω

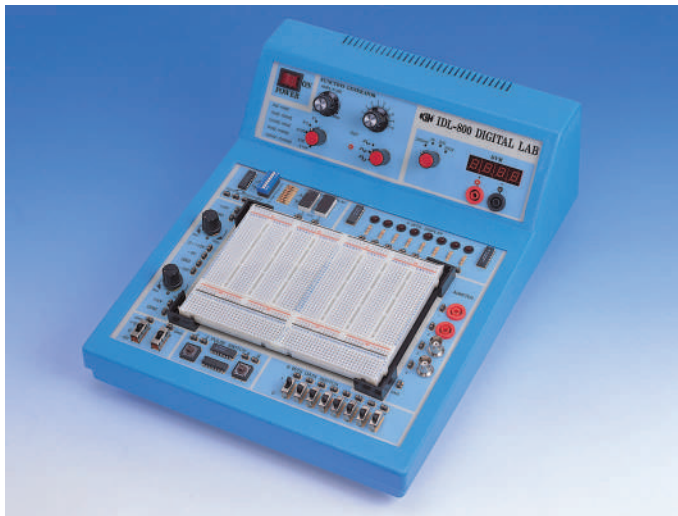
13. Accessories:

● Power cord ● User manual

14. Dimensions: 420 x 360 x 200 mm (L x W x H)

15. Weight: 4.2 Kg

DIGITAL LAB IDL-800



SPECIFICATIONS

1. Solderless breadboard: AD-200

Interconnected nickel plated with a total of 1896 tiepoints in total, fitted all DIP sizes and components with lead and solid wire in diameter of AWG #22-30 (0.3 - 0.8 mm)

2. DC power supply

Variable DC power:

Positive output voltage: 0 to +15 V.

Negative output voltage: 0 to -15 V.

Maximum output current: 300 mA.

Line regulation: < 0.05%/V (Ta=25°C)

Load regulation: < 30 mV (Ta=25°C)

Fixed power supply:

Positive output voltage: 5V ± 0.25 V.

Maximum output current: 1 Amp.

Line regulation: < 50 mV.

Load regulation: < 100 mV.

Negative output voltage: -5V ± 0.25 V

Maximum output current: 100 mA

Line regulation: < 25 mV.

Load regulation: < 30 mV.

All DC power supplies equipped with short circuit protection.

3. Function generator:

Frequency ranges: 1 Hz ~ 10 Hz

10 Hz ~ 100 Hz

100 Hz ~ 1K Hz

1K Hz ~ 10K Hz

10K Hz ~ 100K Hz

Sine wave output: 0 to 8 Vpp variable.

Triangle wave output: 0 to 6 Vpp variable.

Square wave output: 0 to 8 Vpp variable.

4. Digital voltmeter:

3 1/2 digits LED display.

4 ranges: 0 - 199.9 V full scale.

0 - 19.99 V full scale.

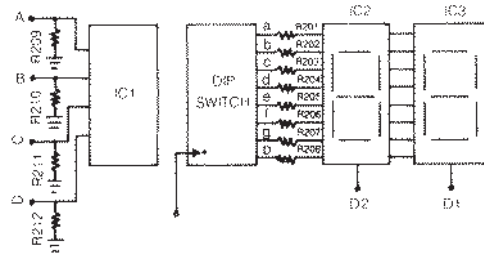
0 - 1.999 V full scale.

0 - 199.9 mV full scale.

Input impedance: 10 MΩ for any range.

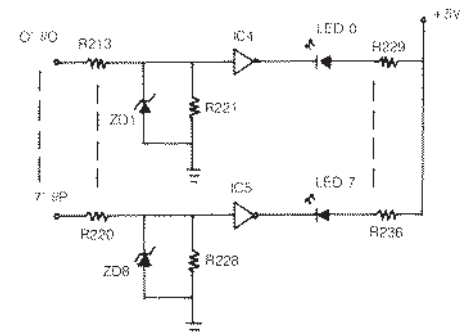
5. Two digits of 7 segment LED display:

Common cathode operation.

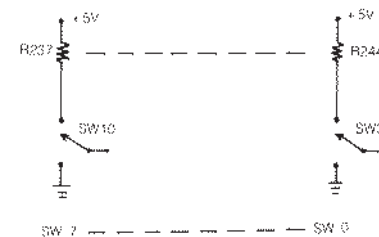


6. Four point tip/ banana socket/BNC socket exchange adapters.

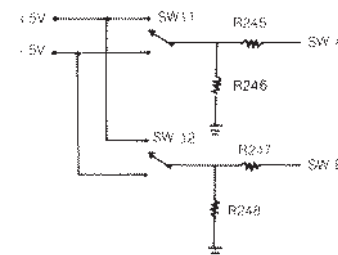
7. Eight buffered LED displays:



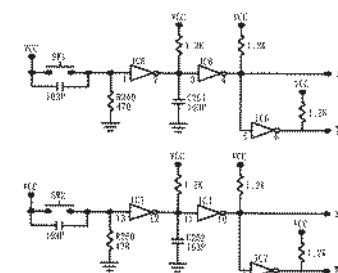
8. Eight data switches:



9. Two function switches:



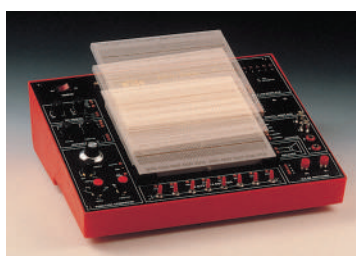
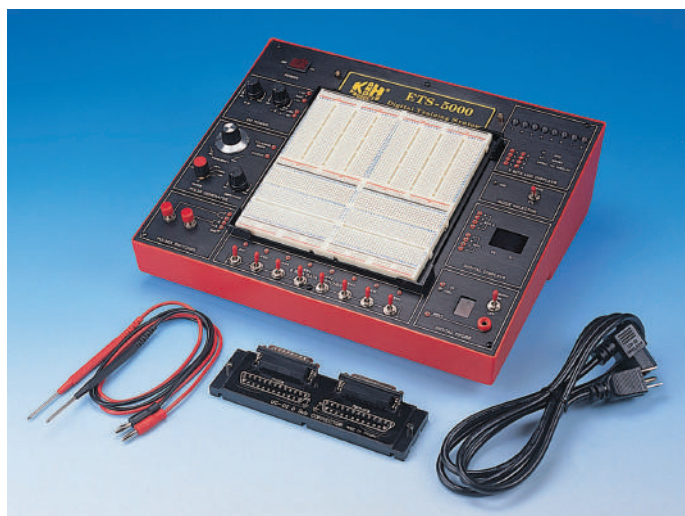
10. Two pulse switches:



11. Dimensions: 480 x 360 x 200 mm (L x W x H)

12. Weight: 4.2 Kg

ADVANCED DIGITAL TRAINING SYSTEM ETS-5000



FEATURE:
SPECIALLY REMOVABLE
AD222 solderless breadboard can be easily put into and taken off. It is a good idea for keeping the individual experiment.



RESERVE FIXED HOLDERS:
It can be ideally suitable for various connectors.

SPECIFICATIONS

1. Solderless breadboard: AD-222

Interconnected nickel plated 2712 tie points, fitted all DIP sizes and all components with lead and solid wire AWG #22-30 (0.3-0.8 mm). It can be changed and replaced for different purpose and can be connected with demonstration panel, therefore; it is very convenient for teachers and students both.

2. DC power supply:

Fixed DC output: + 5 V, 1 A

Fixed DC output: -5 V, 300 mA

Variable DC output: +3 V to +15 V, 500 mA

Variable DC output: - 3 V to - 15 V, 500 mA

3. Mode selector switch:

When the switch is put on "TTL" or "CMOS" position, the input or output of pulse generator, pulser switches, 8 bits data switches digital probe, 8 bit LED display will meet the HI or LO level of "TTL" or "CMOS"

4. Two digits of 7 segment LED display.

Pulse generator:

(A) Duty cycle: 50%

(B) Frequency range: 1 Hz ~ 10 Hz
10 Hz ~ 100 Hz
100 Hz ~ 1K Hz
1K Hz ~ 10K Hz
10K Hz ~ 100K Hz
100K Hz ~ 1M Hz

(C) Amplitude: 0-10 Vpp

(D) TTL/CMOS mode output

TTL: + 5 V

CMOS: +VDC (depends on the +VDC output)

5. Eight bits LED display:

Set mode selector switch to "TTL" position

Logic Level	Input Level	Display light up
LO	$< 0.8 \pm 0.2 \text{ V}$	Green
HI	$> 2.3 \pm 0.2 \text{ V}$	Red
Open	0.8-2.3 V	No display

Set mode selector switch to "CMOS" position

Logic Level	Input Level	Display light up
LO	$< 30 \% + \text{VDC} \pm 10 \%$	Green
HI	$> 70 \% + \text{VDC} \pm 10 \%$	Red
Open	30 %-70 % +VDC	No display

6. Two pulser switches:

A, $\bar{A}$, B, $\bar{B}$ output

Output level:

TTL : HI = 5 V LO = 0.1 V

CMOS : HI = +VDC LO = 0.1 V

7. Eight data switches:

TTL : HI = 5 V LO = 0 V

CMOS : HI = +VDC LO = 0 V

8. Digital probe:

Set mode selector switch to "TTL" position

Logic Level	Input Level	Display
LO	$< 0.8 \pm 0.2 \text{ V}$	L
HI	$> 2.3 \pm 0.2 \text{ V}$	H
Open	0.8-2.3 V	O
Transit	LO --> HI	P

Set mode selector switch to "CMOS" position

Logic Level	Input Level	Display
LO	$< 30 \% + \text{VDC} \pm 10 \%$	L
HI	$> 70 \% + \text{VDC} \pm 10 \%$	H
Open	30 %-70 % +VDC	O
Transit	LO --> HI	P

Memory: the two points of LED beside 7 segment LED display will keep lighting when they are in "level transition" (LO --> HI or HI --> LO).

9. Universal connector: (optional)

It reserves fixed holders on the panel in order to be connected with various connectors, for example:

Standard accessory: UC-02 RS-232 Connector D connector (25 pin female & male)

Optional accessories:

UC-01: Card edge connector 2.54 mm 62 pin

UC-03: Straight header 60 pin

UC-04: Card edge connector 3.96 mm 28 pin

10. Other standard accessories:

- Power cord
- Test probe
- Pin: 6 PCS
- User manual

11. Dimensions:

325 x 250 x 95 mm (L x W x H)

12. Weight: 4.3 Kg

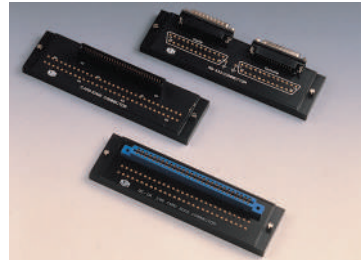
DIGITAL-ANALOG TRAINING SYSTEM ETS-7000



RESERVE FIXED

HOLDERS:

It can be ideally suitable for various connectors.



EXPANSION FEATURES:

It can perform computer interface experiments by matching universal connector.

SPECIFICATIONS

1. SOLDERLESS BREADBOARD: AD-222

Interconnected with 2712 tie points nickel plated contact, fitted all DIP sizes and all components with lead and solid wire AWG #22-30 (0.3- 0.8mm). It can be changed and replaced for different purpose and can be connected with demonstration panel.

Therefore, it is very convenient for both teachers and students both.

2. DC power supply:

- (A) Fixed DC output: +5 V, 1 A.
- (B) Fixed DC output: -5 V, 300 mA.
- (C) Variable DC output: 0 V ~ +15 V, 500 mA.
- (D) Variable DC output: 0 V ~ -15 V, 500 mA.

3. Potentionmeters:

- (A) Variable resistor VR1=1K Ω (B)
- (B) Variable resistor VR2=100K Ω (B)

4. Function generator

- (A) Frequency range 1 Hz ~ 10 Hz
10 Hz ~ 100 Hz
100 Hz ~ 1K Hz
1K Hz ~ 10K Hz
10K Hz ~ 100K Hz
- (B) Amplitude Sine wave output: 0 - 8 Vpp variable
Triangle wave output: 0 - 6 Vpp variable
Square wave output: 0 - 8 Vpp variable
TTL mode output: 0 - +5 V

5. Eight bits data switches:

8pcs toggle switches and corresponding output point. When switch is set at "down" position, the output is LO level; contrarily, it is to be HI level while setting at "up" position.

6. Speaker:

2-1/2 inch diameter, 8 Ω /0.25 W to be used for load.

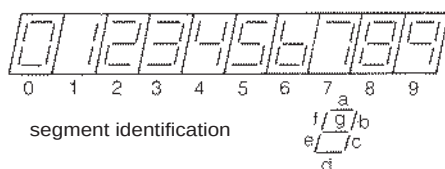
7. Four channel adaptor:

Both of the two banana sockets' and two BNC jacks' point tips are changeable. It is suitable for ETS-7000 to be connected with peripherals.

8. Two digits of segment LED display:

● Output display

Numerical designs and resultant displays



● Truth tables

Decimal Or Function	Inputs				Outputs							
	D	C	B	A	a	b	c	d	e	f	g	
0	L	L	L	L	H	H	H	H	H	H	L	
1	L	L	L	H	L	H	H	L	L	L	L	
2	L	L	H	L	H	H	L	H	H	L	H	
3	L	L	H	H	H	H	H	H	L	L	H	
4	L	H	L	L	L	H	H	L	L	H	H	
5	L	H	L	H	H	L	H	H	L	H	H	
6	L	H	H	L	L	L	H	H	H	H	H	
7	L	H	H	H	H	H	H	L	L	L	L	
8	H	L	L	L	H	H	H	H	H	H	H	
9	H	L	L	H	H	H	H	L	L	H	H	
10	H	L	H	L	L	L	L	L	L	L	L	
11	H	L	H	H	L	L	L	L	L	L	L	
12	H	H	L	L	L	L	L	L	L	L	L	
13	H	H	L	H	L	L	L	L	L	L	L	
14	H	H	H	L	L	L	L	L	L	L	L	
15	H	H	H	H	L	L	L	L	L	L	L	

9. Two pulse switch (with 2 set of output: $\bar{A}$, $\bar{B}$, B):

2 pcs pushbuttons contain switches debouncer for eliminating the bounce caused by switch from "open" to "close" or from "close" to "open" position.

10. 8 bits LED display:

Eight red LED's separate input terminals. The LED will be lighted up when input is at "HI level", and it will be turned off when it is at no input or at "LO level".

11. Universal connector fixed holder:

It reserves universal connector fixed holder on the panel in order to be connected with various universal connectors, which are available listed below:

Standard accessory:

UC-03 Straight header 60 pin

Optional accessories:

UC-01: Card edge connector 2.54 mm 62 pin

UC-02: RS-232 connector 25 pin D sub connector, male & female

UC-04: Card edge connector 3.96 mm 28 pin

12. Other standard accessories:

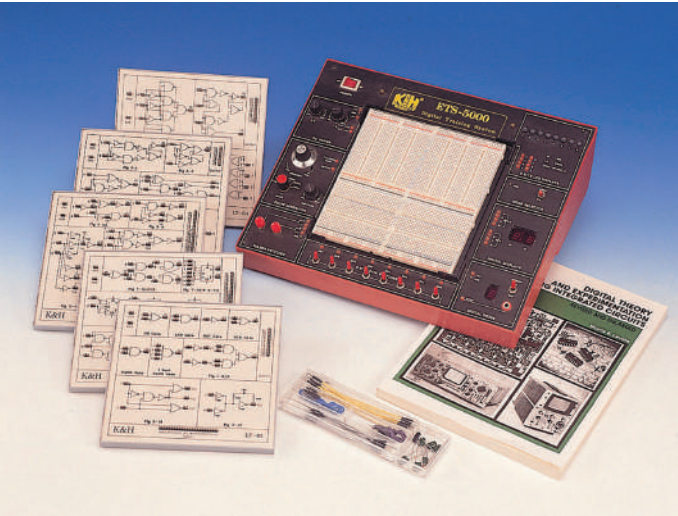
- Power cord
- Pin: 6pcs
- User manual

13. Dimensions: 325 x 250 x 95 mm (L x W x H)

14. Weight: 4.3 Kg



DIGITAL LEARNER'S TEACHER LT-1000



FEATURES

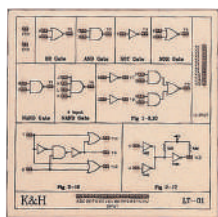
- With 10 modules included 18 experiments
- Step-by-step exercises and application
- Compatible with ETS-7000 digital-analog system, and ETS-5000 advanced digital system.
- Modular can be changed easily.
- With experiment manual.
- Learning electronic circuit in less than 5 minutes.

SPECIFICATIONS

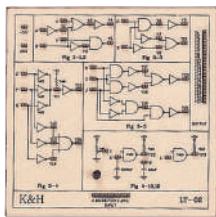
1. 10 experiment modules
2. The element's symbols of experimental circuit are printed on the modules.
3. Dimensions: 380 x 210 x 33 mm (L x W x H)
4. Weight: 4 Kg

COMPATIBLE WITH ETS-5000 ADVANCED DIGITAL SYSTEM

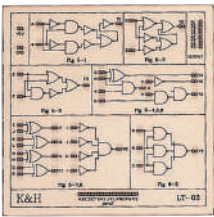
LT-01		LT-02		LT-03	LT-04
EXPERIMENT 1	EXPERIMENT 2	EXPERIMENT 3	EXPERIMENT 4	EXPERIMENT 5	EXPERIMENT 6
BASIC LOGIC FUNCTION	BOOLEAN ALGEBRA AND SIMPLIFICATION OF LOGIC EQUATION	DEMORGANS THEOREM	TTL NAND/NOR GATE-DEFINITIONS AND OPERATION	THE EXCLUSIVE-OR AND ITS APPLICATION	FULL-ADDER AND FULL-SUBTRACTOR
LT-05		LT-06		LT-07	
EXPERIMENT 7	EXPERIMENT 8	EXPERIMENT 9	EXPERIMENT 10	EXPERIMENT 11	EXPERIMENT 12
BISTABLE AND FLIP-FLOP	BINARY COUNTERS AND THE BINARY NUMBER SYSTEM	DEVIDE-BY-N COUNTERS AND THE BINARY NUMBER SYSTEM	SHIFT REGISTERS AND RING COUNTERS	PULSE FORMING AND SHAPING THE SCHMITT TRIGGER	INTEGRATED-CIRCUIT TIMERS-THE 74122, 74121, 555
LT-07	LT-08		LT-09	LT-10	
EXPERIMENT 13	EXPERIMENT 14	EXPERIMENT 15	EXPERIMENT16	EXPERIMENT 17	EXPERIMENT 18
DECODING AND ENCODING	RANDOM-ACCESS MEMORY (RAM)-SCRATCH PAD MEMORIES	THE OPERATIONAL AMPLIFIER	DIGITAL-TO-ANALOG (D/A) AND ANALOG-TO-DIGITAL (A/D) CONVERSION	COMPLEMENTARY SYMMETRY MOS (CMOS)-PRINCIPLES AND CHARACTERISTICS	COMPLEMENTARY SYMMETRY MOS (MOS)-TTL INTERFACE



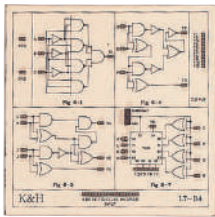
LT-01 EXPERIMENT 1,2



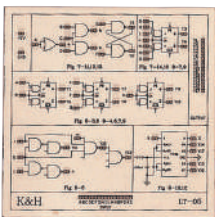
LT-02 EXPERIMENT 3,4



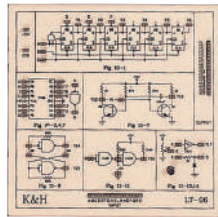
LT-03 EXPERIMENT 5



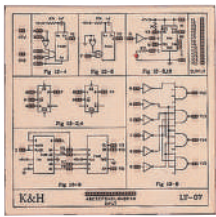
LT-04 EXPERIMENT 6



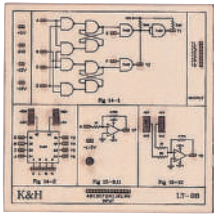
LT-05 EXPERIMENT 7,8,9



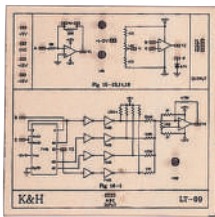
LT-06 EXPERIMENT 10,11



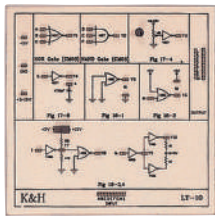
LT-07 EXPERIMENT 12,13



LT-08 EXPERIMENT 14,15

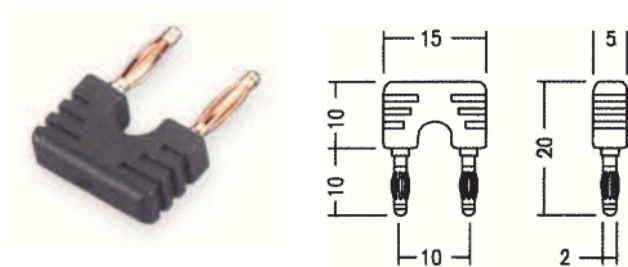


LT-09 EXPERIMENT 15,16



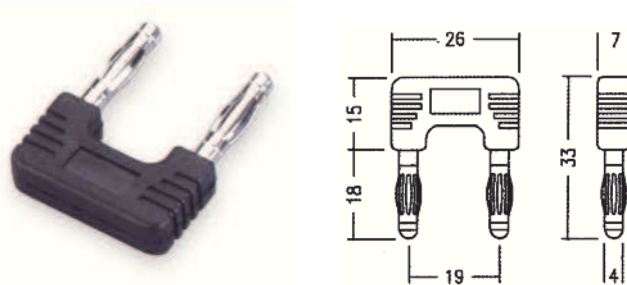
LT-10 EXPERIMENT 17,18

KCG-210



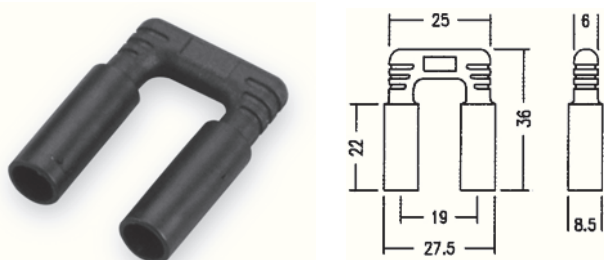
- The 2mm connecting plug suitable for general interconnection on 2mm socket.
- Contact surface: Gold-plated
- Rated current: 10A 50V
- Spacing: 10mm ● Color: Black

KCN-419



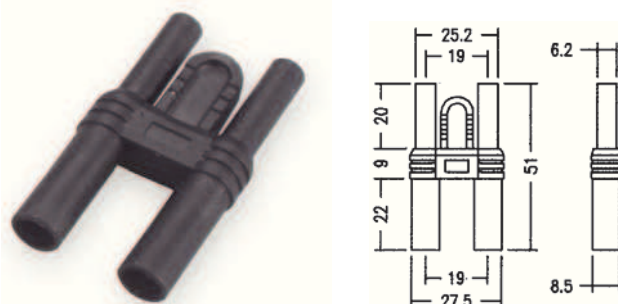
- The 4mm connecting plug suitable for general interconnection on 4mm socket.
- Contact surface: Nickel-plated
- Rated current: 19A 50V
- Spacing: 19mm ● Color: Black

KCN-419A



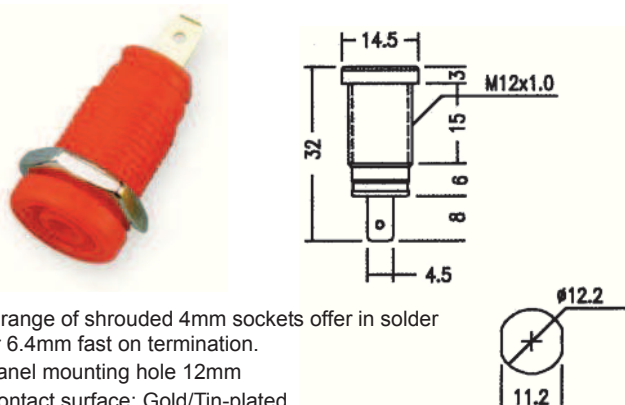
- The safety 4mm connecting plug suitable for general interconnection on 4mm safety socket.
- Contact surface: Nickel-plated
- Spacing: 19mm ● Color: Black

KCN-419B



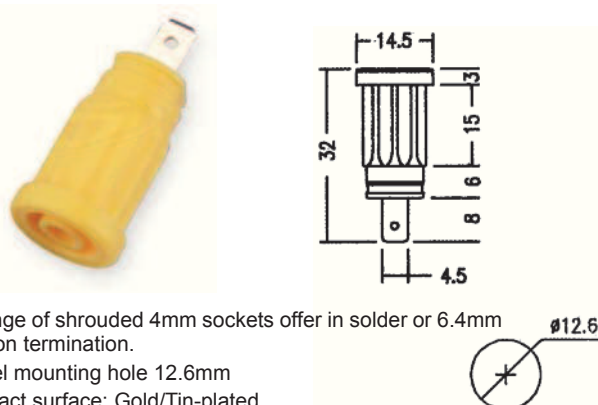
- The safety 4mm connecting plug with two 4mm in-line safety socket suitable for general interconnection on 4mm safety socket.
- Contact surface: Nickel-plated ● Spacing: 19mm ● Color: Black

KEG-4 KEN-4



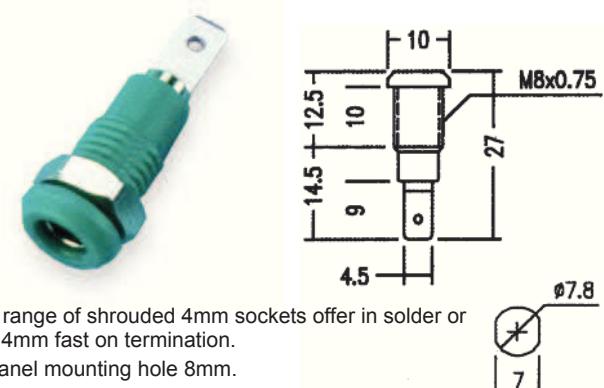
- A range of shrouded 4mm sockets offer in solder or 6.4mm fast on termination.
- Panel mounting hole 12mm
- Contact surface: Gold/Tin-plated
- Rated current: 19A 50V

KFG-4 KFN-4



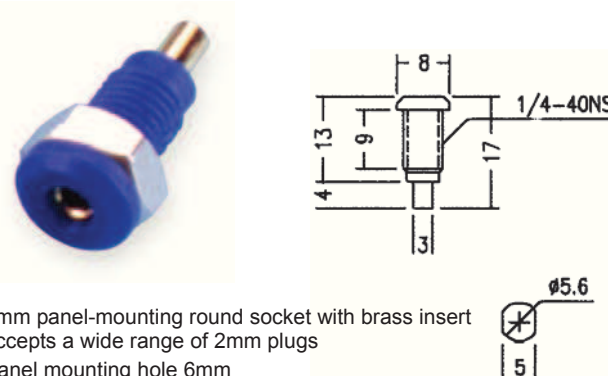
- A range of shrouded 4mm sockets offer in solder or 6.4mm fast on termination.
- Panel mounting hole 12.6mm
- Contact surface: Gold/Tin-plated
- Rated current: 19A 50V

KPG-4 KPN-4



- A range of shrouded 4mm sockets offer in solder or 6.4mm fast on termination.
- Panel mounting hole 8mm.
- Contact surface: Gold/Tin-plated
- Rated current: 19A 50V

KPG-2



- 2mm panel-mounting round socket with brass insert accepts a wide range of 2mm plugs
- Panel mounting hole 6mm
- Contact surface: Gold-plated
- Rated current: 10A 50V

KWG-4 KWN-4  ● 4mm stackable safety plug with cage springs ● Contact surface: Gold/Nickel-plated ● Rated current: 19A 50V	KLG-4 KLN-4  ● 4mm stackable plug with cage springs ● Contact surface: Gold/Nickel-plated ● Rated current: 19A 50V	KMG-4 KMN-4  ● 4mm plug with cage springs ● Contact surface: Gold/Nickel-plated ● Rated current: 19A 50V	KLG-2  ● 2mm stackable plug with cage springs ● Contact surface: Gold-plated ● Rated current: 10A 50V
Length: 25.50.75.100cm	Length: 25.50.75. 100cm	Length: 25.50.75.100cm	Length: 15. 30.45.60cm
KMG-2  ● 2mm plug with cage springs ● Contact surface: Gold/Nickel-plated ● Rated current: 10A 50V	KLG-0.5  ● 0.5mm plug are machined from phosphor bronze. ● 2.5 £p Test-Ring in parallel ● Contact surface: Gold-plated ● Rated current: 10A 50V	KLG-0.5-2  ● Adapter lead with 0.5mm plug and 2mm plug ● Contact surface: Gold-plated ● Rated current: 10A 50V	KLG-2-4  ● Adapter lead with 2mm plug and 4mm plug ● Contact surface: Gold-plated ● Rated current: 10A 50V
Length: 15. 30.45.60cm	Length: 15.30.45.60cm	Length: 15.30.45.60cm	Length: 15.30.45.60cm
CT-26  ● Ready assembled leads wire approx. 0.6M of 133/0.07mm extra-flexible cable. ● Terminated at one end by a 2mm stackable plug and a 35mm long crocodile clip at the other. ● Contact surface: Gold-plated	CT-41  ● Ready assembled leads wire approx. 1M of 301/0.07mm extra-flexible cable. ● Terminated at one end by a 4mm stackable plug and a 35mm long crocodile clip at the other. ● Contact surface: Nickel-plated.	CT-42  ● Ready assembled leads wire approx. 1M of 301/0.07mm extra-flexible cable. ● Terminated at one end by a 4mm stackable safety plug and a 35mm long crocodile clip at the other. ● Contact surface: Nickel-plated	LF-51  ● Fully insulated leads with shrouded BNC plugs complete with moulded-on strain reliefs using RG-58 cable. Black PVC shield. 50 £[impedance. ● Length: Overall length approx. 1M
Color: Red. Black	Color: Red. Black	Color: Red. Black	Color: Black

· THE SPECIFICATONS SUBJECT TO CHANGE WITHOUT NOTICE

· THE DRAWING IS FOR REFERENCE ONLY.